What is claimed is:

1. A torque motor comprising:

   a stator comprising a sleeve with conductive coils disposed thereon, the stator defining a rotor opening; and

   a rotor disposed in the rotor opening, the rotor comprising a magnet disposed on a shaft, the sleeve being shorter than the magnet and the coils including turn around zones beyond respective ends of the sleeve.

2. The torque motor of claim 1 wherein the magnet comprises a substantially permanent magnetic material.

3. The torque motor of claim 2 wherein the magnet comprises two poles on opposite sides of the rotor's rotational axis.

4. The torque motor of claim 1 wherein the shaft and the magnet are aligned on the rotor's rotational axis.

5. The torque motor of claim 1 wherein the magnet comprises a rare earth magnet.

6. The torque motor of claim 1 wherein the sleeve is cylindrical.

7. The torque motor of claim 6 wherein the sleeve comprises material selected from the group consisting of: iron, steel, cobalt, or nickel.

8. The torque motor of claim 1 wherein the stator further comprises a magnetic permeable outer housing.

9. The torque motor of claim 8 wherein the outer housing comprises annular slots to accept and hold the coil turn around zones.

10. The torque motor of claim 1 wherein the turn around zones are substantially perpendicular to the sleeve.

11. An optical scanner comprising:

an optical element configured to direct light from a light source;

a torque motor comprising a stator and a rotor;

the stator comprising a sleeve with conductive coils disposed thereon, the stator defining a rotor opening; and

the rotor disposed in the rotor opening, the rotor comprising a magnet disposed on a shaft, the sleeve being shorter than the magnet and the coils including turn around zones beyond respective ends of the sleeve.

12. The optical scanner of claim 11 wherein the optical element comprises material selected from the group consisting of: mirror, waveplate, and lens.

13. The optical scanner of claim 11 wherein the magnet comprises a substantially permanent magnetic material.

14. The optical scanner of claim 13 wherein the magnet comprises two poles on opposite side of the rotational axis of the rotor.

15. The optical scanner of claim 11 wherein the shaft and the magnet are aligned on the rotor's rotational axis.

16. The optical scanner of claim 11 wherein the magnet comprises a rare earth magnet.

17. The optical scanner of claim 11 wherein the sleeve is cylindrical.

18. The optical scanner of claim 17 wherein the sleeve comprises material selected from the group consisting of: iron, steel, cobalt, or nickel.

19. The optical scanner of claim 11 wherein the stator further comprises a magnetic permeable outer housing.

20. The optical scanner of claim 19 wherein the magnetic permeable outer housing comprises annular slots to accept and hold the coil turn around zones.

21. The optical scanner of claim 11 wherein the turn around zones are substantially perpendicular to the sleeve.

22. A stator for a torque motor, the stator comprising: a sleeve defining an opening for a rotor; and coils disposed on the sleeve, the coils including turn around zones beyond both ends of the sleeve.